

DOCUMENT RESUME

ED 154 670

HE 009 941

AUTHOR Melaragno, Ralph J.; And Others
TITLE Planned Variations Study. Volume I: Executive Summary.
INSTITUTION System Development Corp., Santa Monica, Calif. Studies and Evaluation Dept.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
REPORT NO TM-5857/001/00
PUB DATE 31 Jan 78
CONTRACT 300-76-0539
NOTE 21p.; For related documents see HE 009 942-946

EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.
DESCRIPTORS *Compensatory Education; *Culturally Disadvantaged; *Disadvantaged Youth; *Economically Disadvantaged; *Educationally Disadvantaged; Intervention; Models; Post Secondary Education; Program Evaluation; Research Projects; Secondary Education

ABSTRACT

The executive summary briefly restates the results of a 17-month excursion into the realm of compensatory education of older disadvantaged youth. During September 1976 through January 1978, System Development Corporation conducted a project to conceptualize models for compensatory educational intervention at the secondary and postsecondary levels, the planning of a longitudinal evaluation of the models, development of the methodology for executing the evaluation in a variety of field settings, the selection of appropriate instruments to determine the effects of models of the participating students, and the analysis of existing intervention projects to identify components that could be included in the models. (Author/HSE)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

System Development Corporation

SCOPE OF INTEREST NOTICE

The ERIC Facility has assigned
this document for processing
to: HE

In our judgement, this document
is also of interest to the clearing-
houses noted to the right. Index-
ing should reflect their special
points of view.

TM

ED154670

PLANNED VARIATIONS STUDY

EXECUTIVE SUMMARY

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN-
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT
OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY

VOLUME I

JANUARY 31, 1978

TM-5857/001/00

PLANNED VARIATIONS STUDY
VOLUME I: EXECUTIVE SUMMARY

Ralph J. Melaragno
Gary A. Duck
Charles E. Kenoyer
Margaret F. Lyons
Patrice E. Metro
John R. Shiban
Anthony M. Whitebear

Studies and Evaluation Department
System Development Corporation

January 31, 1978

TM-5857/001/00

The work on which this publication is based was performed pursuant to Contract 300-76-0539, as amended, with the U.S. Office of Education, Department of Health, Education, and Welfare. Views or conclusions contained in this study should not be interpreted as representing the official opinion or policy of the Department of Health, Education, and Welfare.

PREFACE

During the period of September 1, 1976, through January 31, 1978, System Development Corporation (SDC) conducted an extensive planning effort under a contract with the U.S. Office of Education. Called the Planned Variations Study, the project involved the conceptualization of models for compensatory educational intervention at the secondary and postsecondary levels, the planning of a longitudinal evaluation of the models, development of the methodology for executing an evaluation in a variety of field settings, the selection of appropriate instrumentation to determine the effects of models on participating students, and the analysis of existing intervention projects to identify components that could be included in the models.

The genesis for the Planned Variations Study resulted from earlier evaluations of two programs operated by the Bureau of Higher and Continuing Education, the Upward Bound program for secondary students, and the Special Services program for postsecondary students. Based on the outcomes of these earlier evaluations, which had indicated that both Upward Bound and Special Services were achieving certain of their objectives but could benefit from the development of alternative models, the Office of Planning, Budgeting, and Evaluation contracted with SDC to carry out the planning activities outlined above.

The succeeding five volumes in this series document the results of the planning efforts. Volume II describes two intervention strategies developed by SDC for compensatory education projects to meet the unique needs of disadvantaged secondary and postsecondary students. In Volume III we present the design of a longitudinal study to evaluate the effects of models growing out of the two intervention strategies. Volume IV describes a field implementation plan for a longitudinal study, by which intervention models can be implemented in numerous settings and data collected as called for in the study design. In Volume V, we present a set of recommendations for instruments to measure student outcomes in a longitudinal evaluation, based on an analysis of available measures in the cognitive and affective domains. Volume VI contains an index of components of existing Upward Bound and Special Services projects, along with a system for regularly adding to and maintaining the index.

ACKNOWLEDGMENTS

This Executive Summary briefly restates the results of a 17-month excursion into the realm of compensatory intervention for older disadvantaged youth. A large number of individuals collaborated in the work reported in the series of reports summarized here.

The staff of the Planned Variations Study are listed on the cover of this volume, and appear as authors of the other five volumes. Among our colleagues at SDC, who provided both technical assistance and critical reviews of our work, we want to mention particularly Launor F. Carter, John E. Coulson, and Ralph R. Hoepfner.

Two consultants provided the study staff with useful counsel. We are indebted to Clarence Shelley (University of Illinois), and Vincent Tinto (Syracuse University) for the expertise they shared so willingly with us.

During the course of the study, three advisory groups met with the study staff. We are grateful to the members of each group for their advice. The Policy and Research Advisory Group was composed of the following: Wanda Bigham, Morehead State University; Robert Boruch, Northwestern University; Augustine Chavez, San Diego State College; Winston Doby, University of California, Los Angeles; Chester Harris, University of California, Santa Barbara; Schuyler Huck, University of Tennessee; Robert Panos, Oberlin College; and Gwen Stephenson, Washington University. The Target Population Report Review Panel was made up of Bill Barnett, Oklahoma Baptist University; Delia Montes, New Mexico State University; Mildred Ollee, Seattle Central Community College; and John Terry, Massachusetts Institute of Technology. Finally, the following served on the Instrumentation Review Panel: Gordon Berry, University of California, Los Angeles; William Coffman, University of Iowa; Jane Permaul, University of California, Los Angeles; and James Vasquez, University of Washington.

Our interactions with the U.S. Office of Education were with personnel from two agencies. From the Office of Planning, Budgeting, and Evaluation, our contracting agency, we were involved with Robert Berls, C. Dennis Carroll, and Salvatore Corrallo. From the Bureau of Higher and Continuing Education, the funding agency

for the operational programs, we had interchanges with David Johnson, John Rison Jones, and James Kesler. These six people helped shape the study. We hope our reports will be useful to them in their future endeavors.

CONTENTS

	<u>Page</u>
PREFACE.	i
ACKNOWLEDGMENTS.	ii
THE PLANNED VARIATIONS STUDY	1
Rationale	1
Procedures.	3
OVERVIEWS OF THE REPORTS	6
Volume II: Intervention Strategies for Secondary and Post- secondary Compensatory Education.	6
Volume III: Design and Analysis Considerations for a Longitudinal Field Experiment	6
Volume IV: Field Implementation Plan for a Field Randomized Experiment.	7
Volume V: Student Performance Measures for Evaluating Secondary and Postsecondary Intervention Programs	8
Volume VI: Index of Existing Components.	8
APPENDIX: Contents of Volumes II-VI of Planned Variations Study . . .	A-1

THE PLANNED VARIATIONS STUDY

RATIONALE

Federal assistance for the education of disadvantaged children has taken shape through a wide variety of programs. Four of these are programs to assist disadvantaged youth to attain a college education: Upward Bound, Special Services for Disadvantaged Students, Talent Search, and Educational Opportunity Centers. These programs are known collectively as the Special Programs for Students from Disadvantaged Backgrounds, and are administered by the Bureau of Higher and Continuing Education of the U.S. Office of Education (USOE).

Of the four programs cited above, two are germane to the study performed by System Development Corporation (SDC) for USOE: Upward Bound, and Special Services for Disadvantaged Students. A brief description of these two programs follows.

UPWARD BOUND

Upward Bound projects are intended for high school students who are poor and who lack adequate secondary school preparation for postsecondary education. These projects attempt to improve the skills and motivation necessary for students to complete high school and go on to postsecondary schooling. Upward Bound projects typically provide an intensive summer experience for participating students, usually in residence on the campus of the host college, and ongoing support during the time the student is enrolled in high school.

SPECIAL SERVICES

The target population for Special Services is broader than that of Upward Bound. It encompasses students who fall into at least one of the following categories: economically disadvantaged, educationally disadvantaged, culturally disadvantaged, physically handicapped, limited English-speaking ability, and severe rural isolation. Participating students are enrolled in or accepted for enrollment at a postsecondary institution. The goal of Special Services is to assist participating students to succeed in postsecondary education; most Special Services projects offer instructional and counseling services toward this end.

There have been a number of evaluations of the Upward Bound and Special Services programs, frequently offering conflicting and inconclusive results. Tinto and Sherman,¹ Mulka and Sheerin,² and the General Accounting Office³ all concluded that Upward Bound projects had little impact on cognitive achievements, but did have some success in increasing the number of students completing high school and entering college. Recently Burkheimer, et al.,⁴ found little evidence that Upward Bound projects increased high school retention or improved academic achievement. There was, however, evidence of a positive relationship between project participation and postsecondary school entry.

Tinto and Sherman, and Davis et al.,⁵ did not agree with respect to the of Special Services projects. Davis et al., did not find any clearcut evidence of positive impact on either academic achievement or attitudes. Tinto and Sherman agreed with the lack of academic impact, but found some evidence of improvement in the attitudes and motivation of students in Special Services Projects.

The lack of clarity of these various studies resulted in the Office of Planning, Budgeting, and Evaluation of USOE contracting with SDC to conduct the planning and preparation for a different type of endeavor. This effort would include the development of alternative models for the Upward Bound and Special Services programs, to be followed by an evaluation of the newly-developed models. SDC's contract was to carry out certain tasks preliminary to the execution of the study proper.

¹V. Tinto and R. H. Sherman. The Effectiveness of Secondary and Higher Education Intervention Programs. New York: Columbia University, 1974.

²M. J. Mulka and E. J. Sheerin. An Evaluation of Policy Related Research on Postsecondary Education for the Disadvantaged. Detroit: Mercy College, 1974.

³Comptroller General of the U.S. Problems of the Upward Bound Program in Preparing Disadvantaged Students for Postsecondary Education. Washington: Government Printing Office, 1974.

⁴G. J. Burkheimer, et al. Evaluation of the Upward Bound Program. Research Triangle Park: Research Triangle Institute, 1976.

⁵J. A. Davis, G. J. Burkheimer, and A. Borders-Patterson. The Impact of Special Services Programs in Higher Education for Disadvantaged Students. Princeton: Educational Testing Service, 1975.

PROCEDURES

SDC performed a range of activities in fulfilling the requirements of the contract summarized above. Certain critical activities are described in the following sections.

TARGET POPULATION ANALYSIS

An early activity was the analysis of characteristics of students in the target populations for Upward Bound and Special Services. This analysis provided information that was useful in the formulation of the new intervention models, in designing the evaluation of the models, and in developing a plan for the execution of the evaluation in field sites. The results of this analysis are contained in an earlier document¹ and will not be discussed here.

ANALYSIS OF REGULATIONS

As is true for all federal programs, Upward Bound and Special Services are implemented at colleges and universities under a set of regulations prepared by the funding agency (in this case, the Bureau of Higher and Continuing Education). SDC performed analyses of both sets of regulations with two purposes in mind: (a) to isolate relevant information on the student needs to be met by the programs, and (b) to determine the principal characteristics of operational projects funded by each program. From analyses of the regulations, SDC was able to specify the disadvantages of students to be served by Upward Bound and Special Services projects, which provided the outline of student needs. Further, SDC was able to describe the essential features of Upward Bound and Special Services projects, yielding the skeleton of each program as called for in the federal regulations.

DETERMINATION OF STUDENT OBJECTIVES

Since the fundamental goal of the study was to develop new models for the Upward Bound and Special Services programs, SDC recognized that a central task was the specification of student-level objectives. That is, we recognized that any new models for educational intervention for disadvantaged students had to be based

¹Target Population Analysis Report. System Development Corporation. June 1977.

on student objectives to be realized by the model. We also recognized that the subsequent evaluation of the models would have to be in terms of the student objectives underlying the services offered by a project following a model. Therefore, the study staff produced two sets of student objectives, one for Upward Bound, and one for Special Services. These sets of objectives were based on two primary sources of information, the analysis of the target population and the federal regulations. Secondly, the objectives included suggestions from members of the study staff with backgrounds in compensatory education, from consultants to the projects, from members of the Policy and Research Advisory Group, and from personnel from the U.S. Office of Education.

PREPARATION OF MODEL SPECIFICATIONS

Four sets of specifications for intervention models, based on theories of educational attainment, were produced by the study staff. Two theory-based models were designed for the secondary level, and two were for postsecondary educational intervention. To arrive at the model specifications, SDC surveyed the literature on educational attainment and on compensatory education, identified a number of possible theories, and selected four that met criteria related to the purposes and constraints of the study. Intervention strategies derived from student-level objectives and analyses of program requirements contained in federal regulations were developed for Upward Bound and Special Services. Each model specification outlined the methodology for translating the underlying theory into practice, following the parameters of the appropriate intervention strategy. The specification described the manner in which project services, derived from the key attributes of the theory, would be organized and offered to participating students.¹

COLLECTION OF INFORMATION ON EXISTING PROJECTS

In planning the development of new models for secondary and postsecondary educational intervention, SDC was interested in drawing upon the experience of persons in the field who are already operating projects that have some degree of success. We were convinced that developing alternative models without

¹ Draft versions of the four theory-based model specifications are available from SDC. A document describing the model specifications is being prepared.

considering relatively successful projects would ignore potentially useful information that could be used to both strengthen the new models and accelerate the developmental process. Accordingly, the study staff requested, from a number of knowledgeable persons, nominations of existing projects that had components worth examining for potential use in our models. In addition, the staff carried out an extensive survey of current literature to uncover references to projects that appeared to be succeeding with disadvantaged secondary and postsecondary students. From these sources we were able to locate 135 projects, and documentation was obtained on 112 projects. Staff members reviewed the documentation and prepared abstracts of the 112 projects for future use in developing the new models.

PREPARATION OF PLANNING DOCUMENTS

The key tasks outlined previously culminated in the preparation of a series of documents that plan the development of intervention models and their evaluation. Five documents were produced, and are presented as Volumes II through VI in this report series. An overview of the reports forms the next section of this volume.

OVERVIEWS OF THE REPORTS

VOLUME II: INTERVENTION STRATEGIES FOR SECONDARY AND POSTSECONDARY COMPENSATORY EDUCATION

This volume describes two strategies that SDC developed for compensatory education programs at the secondary and postsecondary levels. The report treats the Upward Bound and Special Services programs separately, and carries the reader through the following steps:

1. The analysis of the federal regulations.
2. The analysis of the target population.
3. The specification of student-level objectives.
4. The determination of an intervention strategy.

SDC believes that the development of an intervention project should follow a clear blueprint, a plan that lays out unambiguously the essential components that a project should contain in order to realize its objectives. This, then, is the meaning of an "intervention strategy": it is the description of the components of a project in terms of their objectives, content, procedures, timing, resources, and evaluation. The two intervention strategies described in Volume II accomplish these ends for the Upward Bound and Special Services programs.

Following the description of the intervention strategies, the report also indicates four uses to which the strategies can be put. These include developing a new project, modifying an existing project, developing models based on theories, and evaluating intervention programs.

VOLUME III: DESIGN AND ANALYSIS CONSIDERATIONS FOR A LONGITUDINAL FIELD EXPERIMENT

Earlier, it was pointed out that SDC's responsibility in conducting the Planned Variations Study included the design of a longitudinal evaluation of the intervention models that would be developed. Volume III contains a description of the methodology involved in designing such an evaluation and carrying out the analyses called for in the design. The report is divided into four major sections:

1. Specification of Design and Analysis
2. Design Characteristics
3. Analyses of Student Data
4. Other Categories of Evaluation Data

The purpose for the report is to be a guide to an evaluator charged with carrying out a longitudinal study of new intervention models. SDC has done considerable work toward determining the appropriate design for such a study and specifying the analyses to be conducted. This report presents the outcomes of those efforts; potential problems are identified and possible solutions described. Since the process of generating a study design and an analysis plan begins with the issues to be addressed by the study, a particularly useful portion of the report is the listing of study questions in the Appendix.

VOLUME IV: FIELD IMPLEMENTATION PLAN FOR A FIELD RANDOMIZED EXPERIMENT

Conducting an evaluation of newly-developed intervention models for compensatory education involves two interrelated aspects of what is typically called "field operations." The first aspect is that of implementing the models in field test sites so that each model is operationalized as called for by the model developer. The second aspect involves the collection of data required to evaluate the effects of the model on participating students.

The first section of Volume IV describes the tasks required to carry out these two aspects. First, the report describes the procedures in selecting the sites for the evaluation and in installing the models at those sites. Second, the report provides the details on data collection procedures; this includes both the production and distribution of materials, and the administration of instruments and their return to the study staff.

In the second portion of the report, SDC presents the systems approach used in designing the field implementation plan. The third section of the report describes a number of problems SDC uncovered in planning the field operations of the study, and indicates the solutions SDC developed to those problems.

VOLUME V: STUDENT PERFORMANCE MEASURES FOR EVALUATING SECONDARY AND POST-SECONDARY INTERVENTION PROGRAMS

Previously, it was pointed out that the intervention strategies were based on student objectives. The evaluation of the effectiveness of the new models would be in terms of those student outcomes, and this called for the analysis and selection of instruments that are appropriate for measuring prescribed outcomes. SDC carried out this analysis and selection process, and presents the results in Volume V.

Three student outcome areas were involved in the examination and selection of instrumentation for evaluation of the new models: basic skills, study skills, and affective development. For each area, SDC identified potential instruments, analyzed them in terms of critical criteria, and determined the instrument that would be most satisfactory for a longitudinal evaluation study. The first three sections of Volume V present these results. Content specifics of the three areas are:

1. Basic Skills: language arts (reading and writing), and mathematics.
2. Study Skills: study habits and knowledge of study practices.
3. Affective Development: self-concept, school orientation, locus of control, and motivation to achieve.

In the next section of the report, SDC presents certain problems encountered in the instrumentation process, and its recommendations for their solution. A series of appendices contain the detailed information on the various instruments included in the survey and selection process.

VOLUME VI: INDEX OF EXISTING COMPONENTS

As was indicated earlier, SDC collected, analyzed, and summarized information on over 100 existing projects serving disadvantaged secondary and postsecondary students. The majority of the projects were either Upward Bound or Special Services projects, but some were funded by other sources (federal, state, or institutional). As a next step in the model development process, SDC abstracted components of those projects for which there was evidence that the project was meeting or exceeding a certain level of effectiveness.

It became clear to study staff members that the methodology SDC had used in arriving at abstracts of existing-project components could be of considerable value to the Bureau of Higher and Continuing Education. The Bureau serves as a centralized source of information to directors of existing projects and to individuals desiring to prepare proposals for funding of Upward Bound and Special Services projects. In this role, personnel in the Bureau may be asked to suggest components of projects that a given institution could use in either developing its project or revamping an existing project. Accordingly, SDC built a system for preparing and updating an index of project components that can be used by the Bureau to assist in providing information of value to practitioners in the field.

Volume VI, then, is in two sections. The first presents the rationale and steps involved in developing and maintaining the index of components; this includes all materials the Bureau will need to carry out these tasks. In the second section, SDC presents a prototype of the index, using information on existing projects abstracted during model development. This prototype index includes both secondary and postsecondary project components from Upward Bound, Special Services, and non-Special Programs projects that met all selection criteria.

APPENDIX

Contents of Volumes II Through VI of the Planned Variations Study

VOLUME II: INTERVENTION STRATEGIES FOR SECONDARY AND POSTSECONDARY COMPENSATORY EDUCATION

INTRODUCTION

Purpose

Procedures Followed

DETERMINING STUDENT OBJECTIVES

Analysis of Federal Regulations

Analysis of the Target Population

Objectives for the Secondary and Postsecondary Levels

DETERMINING PROJECT COMPONENTS

Secondary Level Intervention Strategy

Postsecondary Level Intervention Strategy

USES FOR THE INTERVENTION STRATEGIES

Developing a New Project

Modifying an Existing Project

Developing Theory-Based Models

Evaluating Intervention Programs

VOLUME III: DESIGN AND ANALYSIS CONSIDERATIONS FOR
A LONGITUDINAL FIELD EXPERIMENT

INTRODUCTION

SPECIFICATION OF DESIGN AND ANALYSIS

- Identification of Issues
- Specification of Analytical Questions
- Examination of Alternative Approaches
- Selection of Design and Analysis Approaches

DESIGN CHARACTERISTICS

- Cross-Sectional Aspects
- Longitudinal Aspects

ANALYSES OF STUDENT DATA

- Definitions
- Units of Analysis
- Indicators of Program Success
- Adjustments or Corrections to Scores
- Manipulation Versus Observation

OTHER CATEGORIES OF EVALUATION DATA

- Process
- Assessment of Implementation
- Context
- Spinoffs/Spillover

SUMMARY AND CONCLUSIONS

APPENDIX: Study Questions

VOLUME IV: FIELD IMPLEMENTATION PLAN FOR A
FIELD RANDOMIZED EXPERIMENT

INTRODUCTION

Experimental Design
Organization of Report

A PLAN FOR CONDUCTING A FIELD RANDOMIZED EXPERIMENT IN
A POSTSECONDARY ENVIRONMENT

Field Test Initiation Component
Data Collection Component
Project Administration Component
Field Implementation Plan Summary

THE SYSTEMS APPROACH USED IN DESIGNING THE FIP WORKPLAN

Systems Approach
Workplan for Designing the Field Implementaion Plan

PROBLEMS AND SOLUTIONS

Implementation Problems
Production Problems
Conclusions

APPENDIX: Concurrent Production

VOLUME V: STUDENT PERFORMANCE MEASURES FOR EVALUATING
SECONDARY AND POSTSECONDARY INTERVENTION PROGRAMS

INTRODUCTION

Problem

Organization of Report

EVALUATION STUDY REQUIREMENTS

LANGUAGE ARTS, READING, AND MATHEMATICS ACHIEVEMENT TESTS

Introduction

Screening Criteria and Scoring Procedures

Summary of Assessment Results

Recommendations

Assessing Writing Skills

STUDY SKILLS TESTS

Introduction

Screening Criteria and Scoring Procedures

Summary of Assessment Results

Recommendation

STUDENT AFFECTIVE MEASURES

Introduction

Screening Criteria and Scoring Procedures

Summary of Results and Recommendations

PROBLEMS ENCOUNTERED IN THE INSTRUMENTATION PROCESS

Content of Achievement Tests

Identifying Affective Measures

Locating New Affective Measures

Examining Tests for Bias

APPENDIX A: Achievement Test Summaries

APPENDIX B: Study Skills Test Summaries

APPENDIX C: Affective Test Summaries

VOLUME VI: INDEX OF EXISTING COMPONENTS

INTRODUCTION

OVERVIEW OF THE INDEX AND THE SYSTEM

The Index of Existing Components

The System

DESCRIPTION OF THE INDEX OF EXISTING COMPONENTS

The Summary Matrix Section

Component Descriptions Section

Project Information Section

PROCEDURES FOR COMPILATION AND MAINTENANCE OF THE INDEX OF EXISTING COMPONENTS

Collection of Component Data

Screening of Components

Selection of Components

Summary of Component Screening and Selection

Entry of Components into the Index

Removal of Component Descriptions from the Index

ATTACHMENTS

APPENDIX: A Prototype Index of Existing Components